

TRANSLATION

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference B14461.3 ALP	FOR FURTHER ACTION		See Form PCT/IPEA/416
International application No. PCT/FR2004/050659	International filing date (<i>day/month/year</i>) 06.12.2004	Priority date (<i>day/month/year</i>) 08.12.2003	
International Patent Classification (IPC) or national classification and IPC G01J5/20			
Applicant COMMISSARIAT A L'ENERGIE ATOMIQUE			

<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of <u>6</u> sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> (<i>sent to the applicant and to the International Bureau</i>) a total of <u>7</u> sheets, as follows:</p> <p><input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the report</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

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Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

This report is based on translations from the original language into the following language _____, which is the language of a translation furnished for the purposes of:

 - international search (Rule 12.3 and 23.1(b))
 - publication of the international application (Rule 12.4)
 - international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the **elements** of the international application, this report is based on (*replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report*):

the international application as originally filed/furnished
 the description:
 pages 1-30 _____ as originally filed/furnished
 pages* _____ received by this Authority on _____
 pages* _____ received by this Authority on _____
 the claims:
 nos. _____ as originally filed/furnished
 nos.* _____ as amended (together with any statement) under Article 19
 nos.* 1-37 received by this Authority on 09.08.2005 with letter of 03.08.2005
 nos.* _____ received by this Authority on _____
 the drawings:
 sheets 1/7-7/7 _____ as originally filed/furnished
 sheets* _____ received by this Authority on _____
 sheets* _____ received by this Authority on _____
 a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. The amendments have resulted in the cancellation of:

the description, pages _____
 the claims, nos. _____
 the drawings, sheets/figs _____
 the sequence listing (*specify*): _____
 any table(s) related to sequence listing (*specify*): _____
4. This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

the description, pages _____
 the claims, nos. _____
 the drawings, sheets/figs _____
 the sequence listing (*specify*): _____
 any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

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Box No. V **Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Claims	3-15, 18-37	YES
	Claims	1, 2, 16, 17	NO
Inventive step (IS)	Claims		YES
	Claims	1-37	NO
Industrial applicability (IA)	Claims	1-37	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

1. Reference is made to the following documents:

- D1: WO 01/81879 A (RAYTHEON CO) 1 November 2001 (2001-11-01);
 D2: US 4 695 715 A (MALM ROBERT E) 22 September 1987 (1987-09-22)

Clarity

2. The application fails to comply with the requirements of PCT Article 6, since claims 1, 5 and 7 are unclear for the following reasons:

- 2.1 **Claim 1:** Claim 1 is not supported by the description, as required by PCT Article 6, since its scope is broader than that justified by the description and the drawings. The reasons are as follows: in the description, the applicant states that the invention relates to devices for detecting electromagnetic radiation, in particular devices working on the principle of heat detection, such as bolometers and microbolometers. However, the radiant energy measuring device of claim 1 is described in such broad terms that it could be anticipated by any energy measuring device that includes a medium having a movable absorbent

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surface and a substrate comprising reading means. The device of claim 1 is therefore not clearly defined (PCT Article 6).

2.2 **Claims 5 and 7:** The detection device of claims 5 and 7 is not defined by positive features but by a "disclaimer" with regard to its position. The use of a "disclaimer" is reserved for cases where the claim's remaining subject matter cannot be defined more clearly and concisely by means of positive features (see the PCT International Preliminary Examination Guidelines, III-4.12), which is not the case of the claimed device. The device of claims 5 and 7 is therefore not clearly defined (PCT Article 6).

Novelty

3. In so far as claim 1 can be understood, the radiant energy measuring device of claim 1 is not novel within the meaning of PCT Article 33(2), for the following reasons.
- 3.1 D1 describes (the references between parentheses apply to said document):
- a radiant energy measuring device (abstract) including
 - a medium (12, 14, 15 and 18) comprising first means (12) for absorbing a radiant energy and second means (14, 15) for providing one or more electrical signals according to the radiant energy absorbed (page 6, lines 13 to 28);
 - a substrate (11) comprising means for reading (page 6, lines 8 to 10) said electrical signals, such that

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the medium (12, 14, 15 and 18) is movable relative to the substrate (11) (page 6, lines 17 to 18).

The device of claim 1 is therefore not novel (PCT Article 33(2)).

4. Dependent claims 2 to 37 appear to contain no feature which, when combined with the features of any one of the claims on which they are dependent, defines subject matter that complies with the PCT requirements of novelty and inventive step (PCT Article 33(2) and (3)), for the following reasons:

Claim 2: see D1, figure 1, page 6, lines 17 to 18.

Claims 3 to 15: all the claimed features are known in the field of radiant energy measurement (see for example D2, column 6, line 40 to column 7, line 11; figures 5B and 7B).

Claims 16 to 17: see D1, page 6, lines 8 to 28.

Claims 18 to 19: the use of flexible suspension means based on a heat insulation material is known to a person skilled in the art.

Claim 20: to a person skilled in the art, the fact that the substrate and the medium can be mechanically separate is trivial.

Claims 21 to 28: see D2, column 6, lines 30 to 56.

Claim 29: the use of a substrate comprising means for polarising the semi-conductive layer is part of the standard practice in the field of radiation detection.

Claim 30: see D2, column 1, lines 59 to 66.

Claim 31: see D2, column 2, line 65 to column 3, line 9.

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Claims 32 to 34: the use of thermistors, semi-conductive layers and layers for reflecting electromagnetic rays is well known to a person skilled in the art.

Claim 35: see D2, column 2, lines 9 to 24.

Claims 36 and 37: the device described in D2 is a microelectromechanical system made of thin layers.